



Department of Commerce

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Application 2016-003

Washington State
Energy Independence Act

Application for Advisory Opinion and Renewable
Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Soda Lake Geothermal**
WREGIS Generating Unit ID (if already registered):

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☐ Advisory Opinion and WREGIS Certification ☒ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Scott Rhees** Title: **VP Transmission**

Applicant Phone: **801-875-4200**

Applicant E-mail: **scott.rhees@cyrqenergy.com**

Applicant Company Name: **Cyrq Energy**

Company Address: **136 South Main Street, Suit 600**

City: **Salt Lake City**

State/Province: **UT**

Zip Code: **84101**

Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner: **Cyrq Energy**

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **Soda Lake Geothermal**

Facility Name: **Soda Lake Goethermal**

Unit location (street address, legal description, or GPS coordinates):

5500 Soda Lake Road

City: **Fallon**

County: **Churchill**

State/Province: **NV**

Zip: **89406**

Country: **USA**

Provide a description of the facility.

Soda Lake Geothermal is located near Fallon, Nevada and currently consists of two binary geothermal plants that began commercial operation in the late 1980's. The plants are approximately 3/4 mile from each other and are fed from the same geothermal wellfield resource. The existing generating units are outdated, inefficient and costly to operate and the site will benefit greatly from the retirement of the two plants and construction of a new facility using current binary geothermal technology. The new facility will begin commercial operation on January 1, 2018. The new plant will utilize the existing wellfield, which provides 6000 gpm at 325 F and generate 21 MW, which is greater than a 50% increase above current combined output. The facility interconnects onto the NV Energy transmission system and will wheel across NV Energy and BPA to the State of Washington on a real-time basis without shaping, storage, or integration services.

Facility Identification Numbers

WREGIS Generating Unit ID: **Established upon COD**

Other External ID:

EIA Utility Code: **Established Prior to COD**

EIA Plant Code:

Section 4: Facility Eligibility**A. Facility Profile**

Nameplate Capacity (MW): **26.5**

If this value will change, please explain:

Commercial Operation Date (COD): **Jan / 01 / 2018**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No

If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to [RCW 19.285.030](#). For multi-fuel generating facilities indicate all fuels used.

<input type="checkbox"/>	Wind	<input type="checkbox"/>	Wave power
<input type="checkbox"/>	Solar energy	<input type="checkbox"/>	Ocean power
<input checked="" type="checkbox"/>	Geothermal energy	<input type="checkbox"/>	Tidal power
<input type="checkbox"/>	Landfill gas	<input type="checkbox"/>	Gas from sewage treatment facility
<input type="checkbox"/>	Biomass energy (must complete Section 5)	<input type="checkbox"/>	Biodiesel fuel (must complete Section 6)
<input type="checkbox"/>	Water (must complete Section 7)	<input type="checkbox"/>	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☒ Yes ☐ No

- Type of fossil fuel or other non-qualifying fuel: **When the facility goes offline back up power is provided to the office by a diesel generator. In addition, a wellfield pump is served by the backup generator at the plant during initial startup until the geothermal generator comes back online.**
- Average annual amount of non-qualifying fuel used (percent of net heat input): **Less the .005%**

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

<input type="checkbox"/>	Organic by-products of pulping and the wood manufacturing process	<input type="checkbox"/>	Food waste and food processing residuals
<input type="checkbox"/>	Animal manure	<input type="checkbox"/>	Liquors derived from algae
<input type="checkbox"/>	Solid organic fuels from wood	<input type="checkbox"/>	Dedicated energy crops
<input type="checkbox"/>	Forest or field residues	<input type="checkbox"/>	Yard waste
<input type="checkbox"/>	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

<input type="checkbox"/>	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	<input type="checkbox"/>	Wood from old growth forests
		<input type="checkbox"/>	Municipal solid waste

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

- ☐ The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
- ☐ The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

- ☐ **Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.
- Date efficiency improvement completed:
- Method of measuring incremental generation:
- ☐ Incremental generation is separately metered or measured.
- ☐ Incremental generation is modeled each year based on actual stream flows.
- ☐ Incremental generation is modeled as a fixed percentage of total generation.
Fixed percentage: %
- ☐ Incremental generation is modeled as a fixed generation amount.
Fixed amount: megawatt-hours
- Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.
- ☐ **Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

- ☐ **Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
- ☐ **Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below. The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	
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<input type="checkbox"/>	The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:		
<input type="checkbox"/>	Wind	<input type="checkbox"/>	Wave, ocean, or tidal power
<input type="checkbox"/>	Solar energy	<input type="checkbox"/>	Gas from sewage treatment facilities
<input type="checkbox"/>	Geothermal energy	<input type="checkbox"/>	Biodiesel fuel
<input type="checkbox"/>	Landfill gas	<input type="checkbox"/>	Biomass energy
<input type="checkbox"/>	Water (incremental efficiency hydro)	<input type="checkbox"/>	Water (pipe or canal)

<input type="checkbox"/>	The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.
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<input type="checkbox"/>	The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.
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Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee

Date

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 

Date Signed: 3/31/16

Authorized Officer/Agent: **John Perry**

Officer Title and Company: **CFO**

Name of Facility: **Soda Lake Geothermal**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.

Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **\$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to wregis@commerce.wa.gov. Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.



Interchange Scheduling: Statics, Dynamic Scheduling & Pseudo Tie Explanation

Summary : “Dynamic Transfers,” often generically referred to as Dynamic Schedules, may be used to assure the “real-time” deliverability of renewable energy imports sourced from Variable Energy Resources (VERs), interconnected physically within the WECC, into Washington State, from other western states . Dynamic Schedules may take the form of either conventional dynamic imports or Pseudo Ties.

Dynamic Transfers are, in effect, 4-second interchange schedules that transfer the source generator’s energy from the source Balancing Authority (BA) to the sink Balancing Authority using Energy Management System to Energy Management System dynamic transfer functionality. The source VER’s energy is “transferred,” or delivered in real-time, and predicated upon the actual Renewable Portfolio Standard (RPS) qualified energy output of the source generator every 4 seconds between the respective source and sink Balancing Authorities.

These 4-second energy transfers, or “dynamic schedules,” are integrated at the end of each operating hour into an hourly MWh value, which is the actual amount of RPS energy that was dynamically transferred for the operating hour. The physical dynamic interchange schedule, the electronic Tag or “e-Tag”, is updated with the actual amount of energy transferred “After the Fact.” The e-Tag, a grid reliability management tool, documents the actual RPS energy transferred, or delivered from the source BA into the sink BA, in real-time, and serves as the WREGIS REC data source.

Interchange Scheduling – Static or “Normal” Schedules: Energy transfer between Balancing Authority Areas (BAA) on shared interties is typically arranged through static interchange schedules – a 60 minute interchange schedule. Over 95 % of interchange transactions within the WECC are scheduled as static transactions. Balancing and interchange authorities use the North American Electric Reliability Corporation (NERC) electronic tag (e-Tag) system to manage interchange schedules. These NERC e-Tags are grid “reliability” tools used by Balancing Authorities and their Interchange Transaction (ITS) systems, to pre-schedule and manage interchange on their shared interties prior to, and through, the operating clock hour, respectively.

Static interchange schedules are fixed for the operating hour, and transfer fixed, “firm” amounts of energy. The “source” (host or native) BA has the responsibility to provide all real-time balancing needs (e.g., automatic generation control (AGC) regulation and balancing energy) from its own internal resources to assure that the fixed block of energy scheduled is maintained through the operating hour. The source BA provides other BA services like scheduling, operating reserves, outage coordination, and station power to the source generator. Each of the adjacent BAs’ Energy Management Systems (EMS) control their “Net Scheduled Interchange” (NSI) for each intertie to the cumulative NSI, either net import or net export, throughout the operating hour. Each BA’s EMS monitors deviation from its total Net Scheduled Interchange with all of its adjacent BAs (its Area Control Error or “ACE”), and automatically dispatches its internal generation (AGC Regulation units),



every 4 seconds, to offset its real-time load and generation deviations throughout the operating hour to maintain the pre-arranged static interchange scheduling commitments.

Dynamic Schedules and Pseudo Ties - Dynamics are 4-second interchange schedules, and use the same “periodicity” as is used by the Balancing Authority’s EMS systems for Balancing Authority Area control. The 4 second dynamic schedules reflect the actual output of the source generator as measured and transmitted to both host and attaining BAs via telemetry. The responsibility to cover the source generator’s deviation is transferred to the sink BA. Thus, any source generator deviation from its forward scheduled output, through real-time, are covered by the sink BA.

Dynamic imports are considered Unit Contingent import, as they are not backed by operating reserves from the host BA. The host BA has no obligation to provide “firming” energy to assure a fixed hourly schedule as they are with the static interchange schedules. Dynamic schedules have many benefits, such as the ability to modify schedules mid-hour, e.g. facilitate the dispatch of Operating Reserves and deliver RPS energy in real-time.

- **Dynamic Scheduling** can be used when a generator, external to a Washington State Balancing Authority, has transmission to a physical intertie delivery point, and provides the attaining EMS and its host BAA EMS, a 4 second “dynamic” signal and thus access to metering (actual unit energy production) on a real-time basis, i.e. 4- second basis (periodicity). The external generator remains the responsibility of its “host” BAA, and remains subject to the host or “Native” BAA’s Tariff and operating rules. The external generator delivers its RPS energy output, as dynamically “scheduled” into the sink BA.
- **Pseudo Ties and Pseudo Tie Generators (PTG)** also utilize “dynamic scheduling” functionality, however, the responsibility for Balancing Authority services and BA jurisdiction is transferred under this scheduling arrangement to the sink BA. Responsibility for the generator is transferred from the “Host” BA to the “Attaining” BA. The PTG falls under the “Attaining” BAs Tariff and operating rules. Under the PTG arrangement, the external generator’s meter serves two purposes. First, it is a revenue meter for settlements with the sink BA. Second, it is a “Pseudo Tie” meter for the remote new pseudo “tie”, and it is used as a new point of interchange between the “Attaining” BA and the “Host” BA. Accordingly, this new tie appears in both BAs’ perimeter metering and EMS Area Control Error equations for BA grid operations and control.